

ABSTRACT OF THE DISCLOSURE

A streamlined cache coherency protocol system and method for a multiple processor single chip device. There are three primary memory unit (e.g., a cache line) states (modified, shared, and invalid) and three intermediate memory unit pending states. The pending states are used by the present invention to prevent race conditions that may develop during the completion of a transaction. The pending states "lock out" the memory unit (e.g., prevent access by other agents to a cache line) whose state is in transition between two primary states, thus ensuring coherency protocol correctness. Transitions between states are governed by a series of request and reply or acknowledgment messages. The memory unit is placed in a pending state while appropriate measures are taken to ensure access takes place at an appropriate time. For example, a modification occurs only when other agents can not access the particular memory unit (e.g., a cache line).